

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An apparatus for performing instant messaging (IM) under a first protocol, said apparatus comprising:

a first device implementing said first protocol;

a second device implementing a second protocol, wherein messages in said first protocol are incompatible with said second protocol and messages in said second protocol are incompatible with said first protocol, and wherein said first protocol and said second protocol comprise a telephony application protocol and a protocol supporting Instant Messaging (IM) in peer to peer services and at least one of said first device and said second device is a telephone set in one or more telephone sets in a private communications network, said telephone set implementing said telephony application protocol and having a keypad having a fixed number of key buttons and a display;

a protocol converter to convert incompatible messages between said first device and said second device to/from said first protocol from/to said second protocol, said protocol converter providing full IM capability to and managing said IM capability for said telephone set, full IM capability including creating a buddy list and IM capability between telephone sets in said private communications network;

a register to register said first device and said second device; and

a map to map a first client to said first device and a second client to said second device, said peer to peer services.

2. (currently amended) The apparatus of claim 1 wherein said first protocol is a Session Initiation Protocol (SIP), said first device is connected to a SIP server, said first device passing IM communications with other SIP devices through said SIP server and bypassing said protocol converter.

3. (currently amended) The apparatus of claim 2 wherein said second protocol is a Computer Supported Telephony Application (CSTA) and said protocol converter converts messages between CSTA and SIP/SIMPLE, IM messages between telephone sets passing through said protocol converter to said SIP server and returning through said protocol converter.

4. (currently amended) The apparatus of claim 3 wherein said first device is a SIP device, managing and determining presence information for a respective IM user, said SIP device exchanging only SIP/SIMPLE protocol messages with said protocol converter through said SIP server.

5. (original) The apparatus of claim 4 wherein said first device is a Personal Computer (PC).

6. (original) The apparatus of claim 4 wherein said first device is a Personal Digital Assistant (PDA).

7. (currently amended) The apparatus of claim 3 wherein said second device is said telephone set; said telephone comprise a plurality of digital telephones ~~set is a digital telephone~~, instant messaging being displayed on said display on said digital telephones.

8. (currently amended) The apparatus of claim 7 wherein said digital telephones are ~~telephone is~~ connected through a telephonic switch.

9. (previously presented) The apparatus of claim 8 wherein said telephonic switch is a Private Branch Exchange (PBX) connected to said protocol converter using said CSTA protocol and full IM capability further includes composing messages, retrieving and responding to messages, said PBX exchanging only CSTA protocol messages with said protocol converter.

10. (previously presented) The apparatus of claim 3 wherein said first device is a CSTA device, said CSTA device exchanging only CSTA protocol messages with said protocol converter.

11. (previously presented) The apparatus of claim 10 wherein said first device is said telephone set and said telephone set is a digital telephone, wherein at least one key button is a programmable key.

12. (previously presented) The apparatus of claim 11 wherein said digital telephone is connected through a telephonic switch monitoring said key buttons and having full control of said display.

13. (previously presented) The apparatus of claim 12 wherein said telephonic switch is a Private Branch Exchange (PBX) connected to said protocol converter using said CSTA protocol.

14. (currently amended) A method for supporting Instant Messaging (IM) in digital telephones, comprising the steps of:

registering with an interworking unit a first protocol digital telephone set including a display and a keypad having a fixed number of key buttons;

converting in said interworking unit messages from said first protocol digital telephone set in said first protocol to messages in a second protocol incompatible with said first protocol, wherein said first protocol is a telephony application protocol and said second protocol supports peer to peer services including Instant Messaging (IM);

mapping in said interworking unit an IM identity of a client to said digital telephone set; and

communicating from/to said interworking unit an instant message in one or more converted messages to or from said digital telephone set, instant messaging being displayed on said display and said interworking unit providing full IM capability to said first protocol digital telephone set, full IM capability including creating a buddy list, wherein converted messages to or from other registered digital telephone sets are communicated through said interworking unit through a first protocol server and back.

15. (previously presented) The method of claim 14 further comprising the steps of:

registering a second device;

wherein said mapping step further maps an IM identity of a second client to said second device and said instant messaging includes communicating an instant message between said first digital telephone set and said second device through said interworking unit.

16. (previously presented) The method of claim 15 wherein said IM identity of said second device is a personal computer (PC); and

wherein said mapping step further maps a second client to said PC and said instant messaging includes communicating an instant message between said first digital telephone set and said PC through said interworking unit.

17. (currently amended) The method of claim 15 wherein said first protocol server is a SIP proxy server, said second device is a Computer Supported Telephony Application (CSTA) digital telephone set; and

wherein in said converting step said interworking unit also converts messages from said CSTA device to SIP/SIMPLE messages for a SIP device, in said mapping step said interworking unit further maps said IM identity of said second client to said second digital telephone set and said communicating step further includes communicating an instant message between said first and said second digital telephone sets through said interworking unit, said SIP proxy server and back, said interworking unit converting said SIP/SIMPLE messages back to CSTA messages.

18. (previously presented) A method according to claim 14, wherein at least one key button is a programmable key, said method further comprising the step of configuring said at least one key button as an Instant Messaging (IM) key for a digital telephone set.

19. (currently amended) A method according to claim 18 further comprising the step of establishing the IM connection to said other registered digital telephone sets through said interworking unit by pressing said instant messaging key.

20. (previously presented) A method according to claim 14, instant messaging further comprising sending a notification to said digital telephone set when a new instant message arrives, said digital telephone set displaying a new instant message notification in response.

21. (currently amended) A method according to claim 14 wherein instant messaging is accomplished without [[while]] the digital telephone set going [[is]] off-hook.

22. (previously presented) A method according to claim 14 wherein instant messaging includes composing and displaying instant messages using the standard key buttons and display space of said digital telephone set.

23. (previously presented) A method according to claim 14 wherein instant messaging includes sending a notification to said digital telephone set when a request to add said digital telephone set client to the contact list of another instant messaging client is received.

24. (previously presented) A method according to claim 14 wherein instant messaging includes using said digital telephone set to sign-in and sign-out for instant messaging services.

25. (previously presented) A method according to claim 14 wherein instant messaging includes using said digital telephone set to change the on-line and off-line status of said digital telephone set.

26. (original) A method according to claim 14 wherein said step of communicating includes using said digital telephone set to query the status of a contact list member.

27. (original) A method according to claim 14 wherein said step of communicating includes determining the presence status of said digital telephone based on call activity of said digital telephone.

28. (previously presented) A method according to claim 14 wherein instant messaging includes sending stored common replies to other instant messaging clients.

29. (original) A method according to claim 28 wherein at least one of said stored common replies includes at least one custom data field.

30. (previously presented) A method according to claim 14 wherein instant messaging includes sending stored common messages to other instant messaging clients.

31. (original) A method according to claim 30 wherein at least one of said stored common messages includes at least one custom data field.

32. (currently amended) A method for performing instant messaging (IM) under a first protocol, said method comprising the steps of:

identifying a first device implementing said first protocol;

implementing a second protocol in a second device, wherein messages in said first protocol are incompatible with said second protocol and messages in said second protocol are incompatible with said first protocol, and wherein said first protocol and said second protocol comprise a telephony application protocol and a protocol supporting peer to peer services including Instant Messaging (IM) and at least one of said first device and said second device is a telephone set in one or more telephone sets in a private communications network, said telephone set implementing said telephony application protocol and having a display and a keypad having a fixed number of key buttons;

passing incompatible messages between said first device and said second device and IM messages between telephone sets to an interworking unit;

converting incompatible messages between said first device and said second device to/from said first protocol from/to said second protocol, and further. converting back said IM messages between telephone sets in said private communications network;

registering said first device and said second device;

mapping a first client to said first device and a second client to said second device; and

passing converted messages to said first device and said second device from said interworking unit, said interworking unit providing full IM capability to said telephone set, full IM capability including creating a buddy list.

33. (original) The method of claim 32 wherein said first protocol is a Session Initiation Protocol (SIP).

34. (currently amended) The method of claim 33 wherein said second protocol is a Computer Supported Telephony Application (CSTA) and converting said messages converts between CSTA and SIP/SIMPLE and converting back converts SIP/SIMPLE to CSTA.

35. (previously presented) The method of claim 34 wherein said first device is a Session Initiation Protocol (SIP) device, managing and determining presence information for a respective IM user, said SIP device exchanging only SIP/SIMPLE protocol messages with said interworking unit.

36. (original) The method of claim 35 wherein said first device is a Personal Computer (PC).

37. (previously presented) The method of claim 34 wherein said second device is said telephone set and said telephone set is a digital telephone, instant messaging being displayed on said display.

38. (previously presented) The method of claim 37 wherein said digital telephone is connected through a telephonic switch to said interworking unit.

39. (currently amended) The method of claim 38 wherein said telephonic switch is a Private Branch Exchange (PBX) connecting to said interworking unit converting said messages using CSTA, and full IM capability ~~includes~~ further includes composing messages, retrieving and responding to messages.

40. (previously presented) The method of claim 34 wherein said first device is a CSTA device exchanging only CSTA protocol messages with said interworking unit.

41. (previously presented) The method of claim 40 wherein said first device is said telephone set and said telephone set is a digital telephone, wherein at least one key button is a programmable key.

42. (currently amended) An apparatus for supporting Instant Messaging (IM) in digital telephones, comprising:

a register to register a first protocol digital telephone set including a display and a keypad having a fixed number of key buttons, said digital telephone set being one of one or more registered digital telephone sets in a private communications network;

a converter to convert messages in said first protocol to messages in a second protocol and messages in said second protocol to messages in said first protocol, wherein messages in said first protocol are incompatible with said second protocol and messages in said second protocol are incompatible with said first protocol, and wherein said first protocol is a telephony application protocol and said second protocol supports peer to peer services including Instant Messaging (IM), said converter providing full IM capability to and managing said IM capability for said telephone set, full IM capability including creating a buddy list;

a map to map an IM identity of a client to said digital telephone set; and

a communication device coupled through a second protocol server to said converter to instant message with said digital telephone set, instant messaging being displayed on said display, converted messages to or from other registered digital telephone sets being returned from said second protocol server and communicated through said interworking unit from/to said second protocol server.

43. (currently amended) The apparatus of claim 42 further comprising:

a register to register a second device;

wherein said map further maps an IM identity of a second client to said second device and said communication device further instant messages converted messages through said second protocol server between said first protocol digital telephone set and said second device.

44. (previously presented) The apparatus of claim 43 wherein said second device is a personal computer (PC); and

wherein said map further maps said IM identity of said second client to said PC and said communication device further instant messages converted messages between said first digital telephone set and said PC.

45. (currently amended) The apparatus of claim 43 wherein said second device is a first protocol digital telephone set exchanging only first protocol messages with said converter; and

wherein said converter also converts messages in said first protocol from said first protocol device to messages in said second protocol for said second protocol device, said map further maps said IM identity of said second client to said second digital telephone set exchanging only second protocol messages with said converter and said communication device further instant messages converted messages between said first and said second digital telephone sets through said converter and said second protocol server.

46. (currently amended) An apparatus according to claim 43, wherein said second [[first]] protocol is Session Initiation Protocol (SIP), said second protocol server is a SIP server and said first [[second]] protocol is a Computer Supported Telephony Application (CSTA) and wherein at least one key button is a programmable key programmed as an Instant Messaging (IM) key configured by said converter to initiate instant messaging in a digital telephone set and said converter converts messages between CSTA and SIP/SIMPLE.